

REPORT NO.

## INFORMATION REPORT

CD NO.

COUNTRY

East Germany

DATE DISTR. 21 May 1954

SUBJECT

Development of an Analog Computer at the  
Institute for Medicine and Biology of the  
East German Academy of Sciences

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SUPPLEMENT TO  
REPORT NO.

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1. Prior to the construction of the so-called "Pepinsky-Buch" machine, an analog computer for the synthesis of two-dimensional Fourier series, 1/ the Department for Crystal Structure Analysis in the Academy Institute for Medicine and Biology in Berlin-Buch will construct a machine consisting of twenty-four sinus generators for the solution of one-dimensional Fourier series. This machine, which is of more simple construction than the two-dimensional machine, will serve the purpose of testing the functioning of the sinus generators. This element of the machine is a generator of the disc-tap type. The one-dimensional machine is now under construction in the Department under the scientific supervision of Dr. Kaete Dornberger and is supposed to be completed during the first quarter 1954.
2. The discs for the sinus generator are fabricated by VEB Carl von Ossietzky (former Dralowid firm) in Teltow. 2/ If the testing of the sinus generators in the one-dimensional machine has satisfactory results, the order for the fabrication of all sinus generators for the two-dimensional machine will be given to VEM Kleinmotorenwerk Hartha/Sachsen.
3. The attachment is a circuit diagram of the one-dimensional machine now under construction. Twenty-four sinus generators in series connection are fed by as many rectifiers with filter chains. The voltage is controlled through a galvanometer and can be set for the required amplitude values with the aid of twenty-four potentiometers. The sinus generators can be converted to cosinus values through mechanical rotation of the discs 3/ The resultant voltage of all twenty-four sinus generators is fed on the grid of an AD 102 tube, 3/ which operates as cathode amplifier which has an ink recorder inserted in its cathode circuit. The anode voltage for the AD 102 tube is furnished by a rectifier tube, type AZ 12. In order to avoid fluctuations of the synthesized curve to be recorded by the ink recorder, a stabilizer is connected with a stabilizer, type STV 280/50. 4/ One complete computing operation corresponds to 150 millimeter writing length.

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Comment.

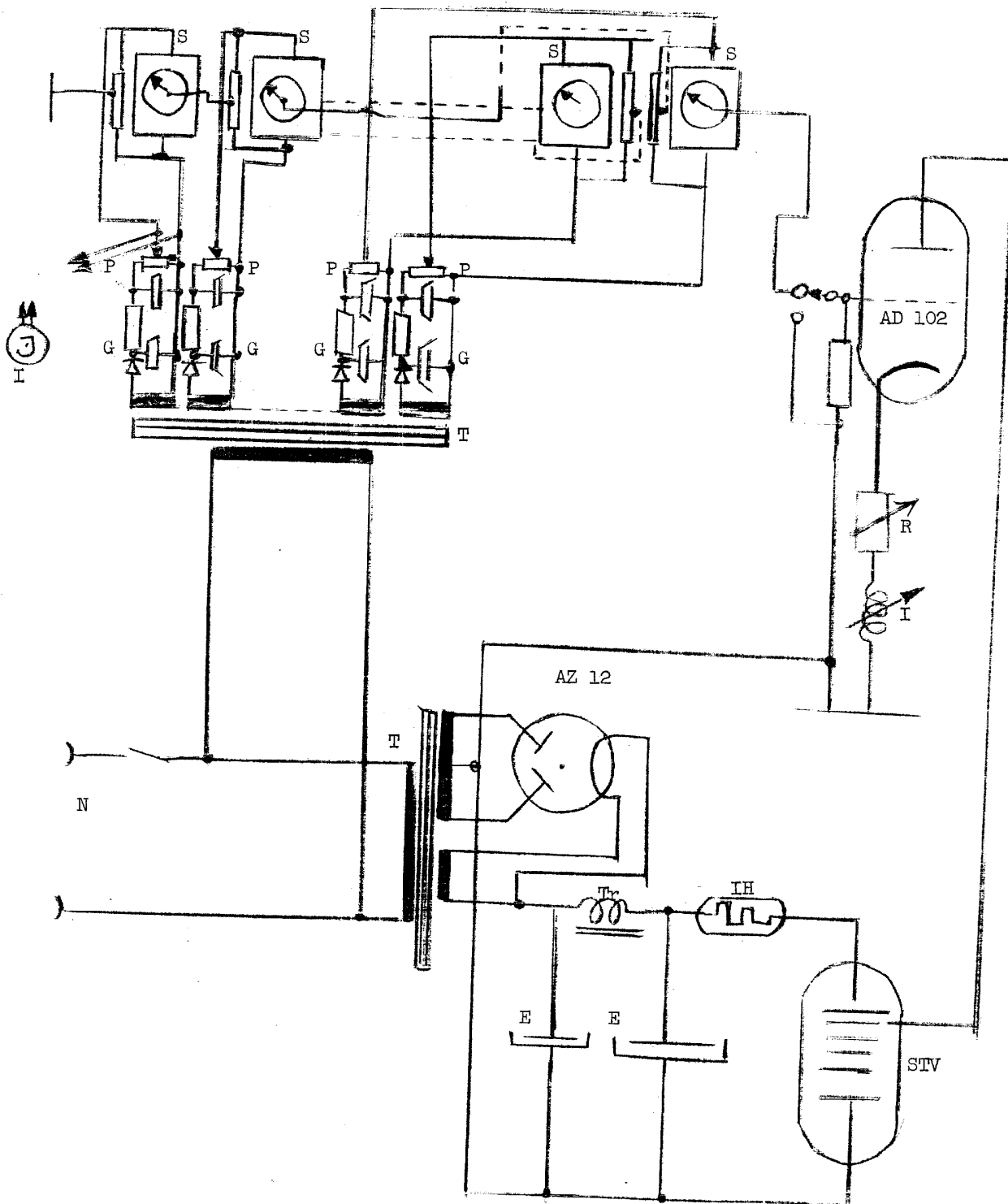
The AD 102 tube is a power triode which was under construction prior to 1945 but is no longer fabricated. There are, however, relatively large quantities left which can be bought by institutes, laboratories, etc. from DHZ.

The STV280/80 stabilizer has a voltage of 280 Volts and a current of 80 milli-amperes.

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## Legend:

S: Sinus generators  
 P: Potentiometers  
 G: Rectifiers  
 I: Galvanometer  
 N: Net connection  
 (220 Volt A.C.)  
 T: Transformers  
 AZ 12: Rectifier

Tr: Throttle (choke)  
 IH: Iron - hydrogen resistance  
 E: Electrolytical condensers  
 (16 micro Farad)  
 STV: Stabilizer  
 I: Ink recorder  
 R: Control resistance  
 (720 Ohm)  
 AD 102: Cathode amplifier

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